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PATENT DEPARTMENT (51851)
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EXAMINER	
MA, CALVIN	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,323	CRUZ-HERNANDEZ ET AL.	
	Examiner	Art Unit	
	CALVIN C. MA	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. The claimed invention is directed to non-statutory subject matter.

The claims 23-25 refers to a computer readable medium comprising computer code which is nonstatutory matter in view of the applicant's disclosure of the computer readable medium may transmit or carry instructions which direct to an electronic signal in paragraph 43 of specification which is transitory and not fall under statutory subject matter. Even after the deletion the of the last sentence in the paragraph, paragraph 43 of the specification still include broad, non-clear terms such as "all optical media" and "other magnetic media", which to one of ordinary skill in the art, can be interpreted as light wave, or any other type of electro-magnetic energy wave which current computer processor can read by detecting the present of such energy wave medium. In this way, the computer readable medium claimed is still analyzed as encompassing EM signal during transmission which is non-statutory.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 12-22 are rejected under 35 U.S.C. 102(e), as being anticipated by Anderson (US Patent: 6,954,899)

As to claim 16, Anderson teaches a switch (i.e. the touch sensitive control device 203 that include a computer display) comprising:

a sensor (i.e. the touch pad controlling surface) (see Fig. 1, Col. 4, Lines 1-67); an actuator (i.e. haptic feedback actuator) (see Fig. 3) configured to output a haptic effect (i.e. the actuator creates haptic feedback to form feedback guidance effect for the scrolling bar 331) (see Fig. 3a, Col. 5, Lines 1-25); and

a processor (i.e. the microprocessor of the computer the control the display system which run the pseudo code) in communication with the sensor and the actuator (i.e. both the sensor and actuator are in communication with the computer processor to receive the input and then outputting appropriate feedback) (see Fig. 3a, Col. 5, Lines 15-25), the processor configured to receive a sensor signal from the sensor, and to cause the actuator to generate a haptic effect based at least in part on the sensor signal, wherein the haptic effect comprises a plurality of detents (i.e. the detents are the

edges of the display pad and the various area that creates the unique control zones where the user are given unique feed backs) (see Fig. 3a, 3b, Col. 5, Line 1 - Col. 6, Line 37) defining a first primary channel (i.e. the up directional channel of control along the Y axis) defined along a second axis (i.e. the Y-axis on display area), a first secondary channel (i.e. the diagonal control channel at 45 degree of Y-axis up direction) proximate to the first primary channel, and a second primary channel (i.e. the right directional control channel in the X-axis) proximate to the second primary channel (i.e. the diagonal control at channel 45 degree of X-axis right direction), the detents configured to substantially constrain movement to one of the first primary channel, the second primary channel, the first secondary channel, or the second secondary channel (i.e. computer is able to output unique detect along each of the axis of the display to coordinate cursor function which user experiences that include scrolling both horizontally and vertically, zooming in and out to interact with user's motions during the feedback) (see Fig. 3a, 3b, Col. 5, Line 1 - Col. 6, Line 37).

As to claim 12, Anderson teaches the switch of claim 16, wherein the switch (i.e.. the touch control surface) comprises a circular shape (i.e. the control pad has a circular control area 104 are the area defining the range of motion) (see Fig. 1, Col. 3, Lines 18-25).

As to claim 13, Anderson teaches the switch of claim 16, wherein the switch comprises an eight-way switch (i.e. the control pad interface allow the user to move in

any direction to for meaningful interaction with object on the display this means that the control is at least eight way with the x y directions and their corresponding diagonal control directions) (see Fig. 3b, 3c, Col. 5, Lines 1-67).

As to claim 14, Anderson teaches the switch of claim 16, further comprising providing a biasing element (i.e. element providing the user transitional feedback which inverse feedback control) proximate to a center of the switch (i.e. the biasing element is the haptic responses according to software control based on transitional capability as shown on the display in Fig. 3c where the user receives additional feedbacks moving to 341) (see Fig. 3c, 3d, Col. 6, Lines 8-67).

As to claim 15, Anderson teaches the switch of claim 16, further comprising providing a detent (56) proximate to a radius of the switch (i.e. since the display control interface is able to create control area at will on the display surface the as seen in figure 3d, the detect created by the haptic area 344 is proximate to a radius of the control screen as a whole) (see Fig. 3d, Col. 6, Lines 37-67).

As to claim 17, Anderson teaches the switch of claim 16, further comprising: a third primary channel defined substantially co-axial with the first primary channel (i.e. the channel formed by a secondary surface from outside of the display area, since the

display panel can have separate behavior in terms of haptic control with respect of the area that is outside of this zone, the zone not making the display can for separate channel of feedback for the user) disposed about a first axis (Y axis); (see Fig. 3c, Col. 6, Lines 1-40);

a fourth primary channel defined substantially co-axial with the second primary channel (i.e. the channel formed by the X-axis motion in area outside of the display area) (see Fig. 3c);

a third secondary channel defined proximate to the third primary channel (i.e. the diagonal control at channel 45 degree of X-axis down direction in the area not displaying the image on screen) (see Fig. 3c);

and a fourth secondary channel defined proximate to the fourth primary channel (i.e. the diagonal control at channel 45 degree of X-axis left direction outside of the image display area) (see Fig. 3c).

As to claim 18, Anderson teaches the switch of claim 17, wherein the first axis is substantially orthogonal to the second axis (i.e. by definition x and y axis in the Cartesian coordinate system are orthogonal with each other) (see Fig 3a, 3c)

As to claim 19, Anderson teaches the switch of claim 16, wherein the first secondary channel is oblique to the first primary channel (i.e. the first secondary

channel can be formed by the movement of the control pad 18 diagonally up and to the right which is oblique to the first primary channel) (see Fig. 3a-3d, Col. 5, Lines 1-66);

and the second secondary channel is oblique to the second primary channel (i.e. the second secondary channel can be formed by the movement of the control pad 18 diagonally down and to the left which is oblique to the second primary channel) (see Fig. 3a-3d, Col. 5, Lines 1-66).

As to claim 20, Anderson teaches the switch of claim 16, wherein the first secondary channel is substantially orthogonal to the first primary channel (i.e. the first secondary channel can be formed by the movement of cursor on the surface area as seen in the haptic box area 341) (see Fig. 3c);

and the second secondary channel is substantially orthogonal to the second primary channel (i.e. the second secondary channel can be formed by the movement of the control pad 18 vertically up which is orthogonal to the second primary channel) (see Fig. 3c).

As to claim 21, Anderson teaches the switch of claim 17, wherein the third secondary channel is oblique to the third primary channel (i.e. the first secondary channel can be formed by the movement of cursor on the surface area as seen in the haptic box area 341) (see Fig. 3c);

and the fourth secondary channel is oblique to the fourth primary channel (see Fig. 3c);

As to claim 22, Anderson teaches the switch of claim 17, wherein the third secondary channel is substantially orthogonal to the third primary channel (i.e. the first secondary channel can be formed by the movement of cursor on the surface area as seen in the haptic box area 341) (see Fig. 3c);

and the fourth secondary channel is substantially orthogonal to the fourth primary channel (see Fig. 3c);

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-11 and 23-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Fish (US Patent: 6,819,312) in view of Tarr et al. (US Patent: 6,084,587) and Anderson (US Patent: 6,954,899).

As to claim 1, Fish discloses a method comprising: defining a user interface having a plurality of input elements (604) arranged in a matrix configuration (i.e. the 3 x

3 array of haptels 604) (see Fig. 6A, Col. 8, Lines 63- 67);

defining a first cell, the first cell comprising representing a first haptic effect configured to guide a movement of a user manipulable object (i.e. since more than one of the haptel can be grouped to together to output a haptic feedback, a cell for this purpose has a parameter for haptic feedback effect and such feed back gives the user guidance when the computer cursor is interacted upon to achieve a set user objective) (see Fig. 10, Col. 17, Lines 10-40);

assigning the first cell to a first input element in the matrix configuration (i.e. the step 1012 seek out each haptel to assign them into the cell) (see Fig. 10, Col. 17, Lines 10-40);

assigning the first cell to a second input element in the matrix configuration(i.e. the step 1012 seek out another haptel to assign it into the cell that may include all of the haptels) (see Fig. 10, Col. 17, Lines 10-40);

receiving a sensor signal from a sensor indicating a manipulation of at least one of the first of second input elements (i.e. the control processor 904 examiner the sensor data where both the of the haptel area is contacted by the step 1008) (see Fig. 10, Col. 16, Lines 66-67); and

outputting the first haptic effect based at least in part on the sensor signal (i.e. the haptic feedback effect is outputted back on the user interaction and the processor assigned haptic feedback type) (see Col. 17, Lines 46-60).

However Fish does not explicitly teach a first parameter and manipulatable object of an interface device. Tarr teaches a first parameter (i.e. the parameter can be the

coefficient of friction that affect the haptic feedback) (see Fig. 7, Col. 9, Lines 55-61).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the haptic interaction control of Tarr in the overall haptic control device of Fish in order to add the ability to define a haptic VR space independently of a graphical space to provide greater degree of flexibility. (See Tarr Col. 1, Lines 59-63)

Anderson teaches feedback effect guide a movement of a user manipulatable object of an interface device (i.e. the object is the scroll bar 331 where the user interest with the computer interface to move the display) (see Fig. 3a, Col. 5, Lines 1-25).

Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the objection control interface design of Anderson in the haptic feedback control system of Fish in order to create a more intuitive experience for user input) (see Anderson Col. 2, Lines 23-24)

As to claim 23, see discussion of claim 1 above, claim 23 is analyzed as the same as claim 1, where the only variation is the substitution of a computer program stored in a computer readable medium, and is rejected on the same ground.

As to claim 2, Fish teaches the method of claim 1, further comprising communicating the first cell from a first processor (i.e. computer CPU) to a second processor (904) (i.e. since the haptic control processor 904 must communicate with the received the processes to be outputted) (see Fig. 16, Col. 21 Lines 40-55, Col. 22,

Lines 1-13) (see Fish Fig. 6, 7, Col. 9, Line 48-Col. 10, Line 23).

As to claim 3, Fish teaches the method of claim 2, further comprising: defining a second cell (i.e. another area on the haptic grid that represent a virtual object of Tarr), the second cell comprising a second parameter (i.e. another one of the parameters of the sub-construct, for example texture) representing a second haptic effect (i.e. the parameter that factor into how the haptic interactions are applied to the user, when the user interacts with the object in the virtual space, which represents another type of haptic effect) (see Tarr, Fig. 2, Col. 5, Lines 55-65); communicating the second cell from the first processor (i.e. computer CPU) to the second processor (i.e. the control processor of the haptic device 940); and assigning the second cell to a third input element in the matrix configuration (i.e. since the second cell object can be assigned to another haptel 604 in the grid) (see Fish Fig. 6, 7, Col. 9, Line 48-Col. *10,* Line 23).

As to claim 4, Fish teaches the method of claim 3, wherein the first and second cells are defined by the first processor (i.e. the processor of the computer that create the virtual object and processes it and represent it with a haptic feedback) and the first, second, and third input elements are assigned by the second processor (i.e. the control processor 904 assign the haptels to deliver the haptic feedback for each of the objects) (see Fish Fig. 6, 7, Col. 9, Line 48-Col. 10, Line 23).

As to claim 5, Fish teaches the method of claim 3, wherein the third location is disposed between the first and second input element (i.e. since the haptel grid is show with a 3 x 3 matrix the third location is the middle haptel on the grid) (see Fig. 6A, Col. 8, Lines 63-67).

As to claim 6, Fish teaches the method of claim 1, wherein the matrix configuration comprises a square shape (i.e. since the haptel grid is show with a 3 x 3 matrix in a square shape) (see Fig. 6A, Col. 8, Lines 63-67).

As to claim 7, Tarr teaches the method of claim 1, wherein the matrix configuration comprises a circular shape (i.e. the matrix, a higher level object can be circles which can be implemented as a plurality of haptels arrange in a circular shapes) (see Tarr Col. 6, Lines 6-7).

As to claim 8, Tarr teaches the method of claim 1, wherein the first cell comprises a first detent and the second cell comprises a second detent (since during a collision with the cells (sub-constructs) the user are prevented from penetrate the object, the cell comprises detent that allow limitation of user movement in the virtual space) (see Tarr Cot 7, Lines 20-34)

As to claim 9, Fish teaches the method of claim 3, further comprising providing an actuator (i.e. any one of the moving assembly 100 affect all of the other haptels and

are controlled together) in communication with the first, second, and third input element (i.e. since the haptic feedback grid is coordinate by the computer CPU to express complex haptic interactions each of the actuator 100 are communication with the surface sensor relevant to each of the three haptels and controlled together) (see Fish Fig. 1, 6A, Col. 9, Lines 1-45, Col. 10, Lines 7-60).

As to claim 10, Fish teaches the method of claim 2, wherein the second processor is disposed remotely from the first processor (i.e. the processor is capable of communicating RS-232 cable means that they are remotely connected to operate) (See Fish Fig. 7, Col. 10, Lines 7-25).

As to claim 11, Tarr teaches the method of claim 1, wherein the first cell comprises an arc and first and second edges (i.e. since the virtual object can be a sum of various other sub-construct object such as a line or shapes) (see Fig. 1-3, Col. 5, Lines 40-55, Col. 6, Lines 1-23);

and wherein the haptic effect comprises a plurality of force vectors within the first cell, the force vectors directed outward from a centerline of the first cell toward the first and second edges (i.e. the various parameter that is able to be assigned to the objects such as viscosity and acceleration are force vectors, since during the user interactions these elements direct the forces that is applied the user; also since the force must be applied from a point in the virtual space the object in virtual space when interacting with

the user will direct force in a radial manner from a give point) (see Col. 5, Lines 55-65)

As to claim 24, Fish teaches the computer-readable medium of claim 23, further comprising program code for communicating the first cell from a first processor to a second processor (i.e. the processor is capable of communicating RS-232 cable means that they are remotely connected to operate) (See Fish Fig. 7, Col. 10, Lines 7-25).

As to claim 25, Fish teaches The computer-readable medium of claim 24, further comprising: program code for defining a second cell, the second cell comprising a second parameter representing a second haptic effect; program code for communicating the second cell from the first processor to the second processor; and program code for assigning the second cell to a third input element in the matrix configuration (i.e. since the haptel grid functions together to form a virtual grid of feedback the various underlying effect is created by the computer generated cell of haptel feedback zone which requires the both processor be driven together for multiple feedback) (see Fish, Col. 17, Lines 1-25).

Response to Arguments

7. Applicant's arguments regarding to claims 23-25 filed July 6, 2009 have been fully considered but they are not persuasive.

The applicant in page 9 of the remark regarding claims 23-25 argues that the 101 rejection is overcame with the amendment to the specification. The examiner after careful re-examination of the specification disagree with this assessment since the non-clear terms such as "all optical media" and "other magnetic media" in paragraph 43 of the specification, can be interpreted by one of ordinary skill in the art as light wave, or any other type of electro-magnetic energy wave. In this way, the computer readable medium claimed is still analyzed to be an electromagnetic energy wave which could be an optical medium or magnetic medium forming an EM signal which carries the software coding sequence during its transmission. In this way it would have been obvious to an artisan skill in the electronic art to have construed the medium claimed as non-statutory in nature.

8. Applicant's arguments filed 12/21/2009 have been fully considered but they are not persuasive;

Applicant's arguments with respect to claims 12-22 as presented in pages 9-10 of the reply, that the prior art Anderson does not disclose "wherein the haptic effect ... second primary channel" is not persuasive because the term used in the claimed limitation such as primary channel and axis are broadly defined. For example, the term "axis" has various definitions and can be defined as a straight line through a body or figure that satisfies certain conditions and the term Channel can have the definition of a type of transmission or to direct the flow of. In the broadest reasonable interpretation of the claimed limitations of claim 12, the limitations read on the prior art Anderson

because Anderson teaches in figures 1 and 3, that the axis of the scrolling functions and the transposition function are components of the entire haptic based control environment which has a virtual image for directing control as shown in figure 3d which directs to a box formed the first and second primary channels as the virtual presentation gives the user a reference of movement which is directing the user to move the interface; this is a definite way to allow control flow of input direction. In this way the claimed limitation indeed read on the disclosure of the prior art Anderson.

Applicant's argument with respect to claims 1-11 and 23-23 as presented in pages 10 and 11 of the reply, that the prior arts does not teach "a first haptic feedback configured to guide the movement of the interface device"; the examiner disagree because for the user of the interface device the virtual image and the coordinated haptic feedback as taught by Anderson does indeed direct the movement of the interface device since the user of the device is guided to move the object in the interface in a specific way to complete a task, this means that the feed back is configured to allow the user to interact with the interface device, this when view with Fish's haptic grid system meet the limitations of claim 1.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Calvin Ma whose telephone number is (571) 270-1713. The examiner can normally be reached on Monday - Friday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Calvin Ma

March 25, 2010

/Chanh Nguyen/
Supervisory Patent Examiner, Art Unit 2629